

**Engagement Opportunities in NASA STEM (EONS)
FY23 NASA Research Announcement (NRA) NNH23ZHA001N-MCA**

MUREP Curriculum Awards (MCA)

Title: Establishing STEM Majors at Prince George's Community College

Institution: Prince George's Community College

City/State: Largo, Maryland

PI: Neeharika Thakur

FY: 2023

Prince George's Community College (PGCC) seeks NASA support to establish its new Chemistry Associates of Science (CHM AS) degree that starts in Fall 2023 and prepare for a Physics AS degree. For the first time in PGCC's history, there is focus on developing STEM majors. The AS degrees will allow seamless transfer without loss of time. This is of great interest to our partner, the University of Maryland College Park (UMD). We will build upon improvements made to the physics curriculum from a previous NASA grant (PI, Prof. Neeharika Thakur) and align it with the physics major program at UMD. The CHM AS program, designed by Co-I, Prof. Nadene Houser-Archield and evaluated by Dr. James Lookadoo, a recent ABET team leader, will be a model for community colleges nationwide.

We request funding to purchase equipment for Chemistry and Physics courses that support the CHM AS degree and enhance the physics curriculum. Student research interns are a key part of the project. PGCC has a long-standing relationship with Goddard Space Flight Center (GSFC). PGCC faculty will mentor small research projects during the academic year. This grant will support interaction between PGCC students and our UMD collaborators' students—Prof. Leah Dodson and Prof. Eun-Suk Seo as well as research internships. Dr. Houser-Archield and Dr. Dodson's group at UMD work on quantum chemistry calculations yielding insight into laboratory astrochemistry research. This project will forge a physics partnership between PGCC and UMD. PGCC students will work with Dr. Seo's experimental cosmic ray physics group. Fostering interaction between UMD and PGCC students is important for this project.

Today books and homework systems exceed community college tuition. PGCC works with LibreTexts to build free textbooks; over 60 are designed and used by PGCC faculty. Prof. Joshua Halpern will lead the PGCC team to create open texts and build a question repository for chemistry and physics as part of the LibreTexts online homework system that will be free to PGCC students and others.